DOCUMENT RESUME

ED 167 683 UD 019 212

TITLE	Improving Achievement in Reading and Mathematics. A Position Paper.
INSTITUTION	Texas Education Agency, Austin.
PUB DATE	Jan 79
NOTE	38p.
EDRS PRICE	MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS	*Academic Achievement; Administrator Responsibility; *Basic Skills; Compensatory Education; *Educational Accountability; *Educational Assessment; Educational Finance; *Educational Improvement; Educational Legislation; Elementary Secondary Education; Equal Education; Ethnic Groups; Teacher Responsibility
IDENTIFIERS	*Texas

ABSTRACT

The views of seven urban Texas school districts with regard to educational improvement are represented in this paper. The importance of local control and a variety of program alternatives is explained. The need for tax relief in order to maintain legislatively mandated programs is discussed. Findings of two research studies with regard to assessment of student performance and socioeconomic and/or ethnic status are summarized. Conditions necessary for improved instruction, including administrator and teacher competency; priority placed on teaching basic skills; planning of instructional activities; and student and parent responsibility are outlined. The need for compensatory education programs for lower socioeconomic groups and ethnic minority students and for teacher re-education is identified. Recommendations are made concerning the role the Legislature should play in student assessment; funding compensatory education; providing resources for accountability procedures; and encouraging the development of school personnel. (WI)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

MAR 1 4 1979

ED167683

Improving Achievement In Reading And Mathematics

A Position Paper Prepared And Presented By Urban Advisory Committee And Texas Education Agency

January 1979

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Linda Kemp
Texas Education Agency
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

UDO 19212

The Urban Advisory Committee is composed of the Superintendents from the following seven urban school districts:

- Austin
- Corpus Christi
- Dallas
- El Paso
- Fort Worth
- Houston
- San Antonio

and representatives from institutions of higher learning, Regional Education Service Centers, and the State Department of Education.

ABSTRACT

The Problem and Rationale

This document presents the position of the seven urban school districts* which, as a compact in concert with the State Department of Education, are struggling under difficult circumstances to equalize educational opportunities and improve results for all students they serve.

These districts are committed to local control and governance of educational programs as well as to the belief that a variety of program alternatives must be provided in order to be responsive to the unique needs of urban students, parents, and school staffs.

The compact districts have implemented legislatively mandated program improvements in bilingual education, special education and vocational education, among others, consistent with *Rodriquez*,** along with the State Board of Education's school accreditation process in the intent and spirit of these efforts. This has been conscientiously attempted despite the eroding effects of inflation and urban overburden, neither of which has been addressed fully by House Bill 1126 or Senate Bill 1 of the 64th and 65th Legislatures. In order to maintain legislatively mandated programs and continue school improvements required by law, the urban compact districts need tax relief, not restrictions on tax resources by initiative and referendum.

Student Assessment Findings

The urban districts are especially mindful that they must serve a disproportionate and escalating number of the state's poor and ethnic minority children whose achievement in reading and mathematics is below expectations and that of the state. This is borne out by the voluntary study conducted by the urban compact in 1976 and the Texas Assessment Project (TAP) study of 1978.

---

*Austin ISD, Corpus Christi ISD, Dallas ISD, El Paso ISD, Fort Worth ISD, Houston ISD, and San Antonio ISD.

***Rodriquez vs. Edgewood ISD*, 1971; reviewed, U.S. Supreme Court, 1973.

Research Findings

The urban districts have conducted numerous research studies which confirm that effective instruction of lower socio-economic and ethnic minority students is more difficult to deliver because less is known about what motivations are needed to optimize achievement and what teacher competencies are needed to ensure success in school. Concomitantly, other research by the urban compact points up the severity of problems related to low achievement — insufficient time and intensity of instruction, inconsistent attendance, and high mobility among these student populations. Other urban research correlates low student achievement with excessive teacher mobility, turnover and absenteeism, as well as difficulties posed by inadequate parent-school relationship and home learning environment. The complex interaction of the above-mentioned factors compounds their negative effect upon student achievement and points up the unique needs of urban schools for special compensatory education programs and services for students, parents, and education professionals.

Conditions Necessary for the Delivery of Improved Instruction

The urban compact has directed thoughtful consideration and study of student assessment results and research findings referenced earlier. It has concluded that the needed special compensatory education programs and services can be provided, given a sufficient concentration of resources, within a framework of ten major conditions which the compact can manage and direct under their individual local control and initiative. These conditions, generalizable to other school settings, are as follows:

1. The local board with community and professional staff identifies the teaching of essential reading and mathematics skills as a priority expectation.
2. There is a clear local policy that tells all professional staff which areas are considered to be the most important. Priority expectations are clearly communicated to principals, teachers, parents, and students.
3. Administrators have competencies required for the management of essential reading and mathematics instruction.

4. Time, talents, and energies of all professional staff are concentrated on planning and implementing instructional programs for student mastery of essential reading and mathematics skills.
5. Frequent classroom assessment of student performance is an integral part of the instructional process.
6. Professional staff ensures that instructional activities are well planned.
7. Policy makers and administrators are committed to recruiting, employing, and retaining qualified, competent teachers and other instructional personnel.
8. Teachers possess and can apply and teach essential reading and mathematics skills.
9. Students and teachers have the time, materials, continuity of instruction, and an orderly situation for effective learning.
10. Students and parents are encouraged to assume a share of the responsibility for mastering essential reading and mathematics skills.

The urban districts have underway a variety of program improvement activities, many of which are directed toward improving achievement of lower socio-economic and ethnic minority students. The above-mentioned conditions for the delivery of effective instruction are consistent with these and other ongoing improvement activities.

Conclusions

The urban districts have established a toehold toward improving the achievement of lower socio-economic and ethnic minority students. Voluntarily, as well as through the school accreditation process, they have strengthened their capability to plan and implement general and compensatory education programs for school improvement. The two student assessment studies as well as various urban research studies have enhanced these programs. Furthermore, much of the voluntary planning of the urban compact brings into focus the following major conclusions:

1. Underachieving lower socio-economic and ethnic minority students require special compensatory education programs and services in order to develop reading and mathematics essential skills. Urban schools have many barriers to solving the problems

of underachieving students because of size, complexity, and special student population needs including their home environment.

2. The urban schools must have qualified staffs who are competent to teach the essential reading and mathematics skills. This condition should be ensured through (a) teacher education programs and certification, (b) retraining and recertification where necessary, (c) appropriate inservice development for teachers and administrators, and time and expertise for delivery.
3. The urban school compact has demonstrated capability to develop and operate a minimal accountability and school improvement system. This has been accomplished without legislative mandate and in the true spirit of local control and initiative.

RECOMMENDATIONS

To address the conditions identified in this paper and to make possible the strengthening of educational programs that will improve student achievement in reading and mathematics, the 66th Texas Legislature is urged to consider the following actions:

1. The Legislature is urged to recognize that existing school accreditation standards and other policies of the State Board of Education require school districts to carry out effective accountability procedures: assessment of the proficiency of students in mastering basic competencies, evaluation of instructional programs, and planning for the improvement of instruction. Most Texas school districts are already making tangible progress toward strengthening their accountability under State Board policies. It is important that additional statewide assessments of student achievement in basic curriculum areas be carried out in subsequent years to provide a reference for school district accountability and to serve as a basis for statewide policy planning and for reporting to the legislature.
2. The Legislature should increase funding levels of state compensatory education programs and services and provide for allocation of funds through a formula which recognizes high-cost instruction required wherever there are concentrations of high-need, underachieving students.
3. The Legislature should provide resources to support effective procedures for accountability and renewal in school districts — student assessment, evaluation of instruction, and planning for improvement of instruction — within the framework of the State Board accreditation standards and other policies that promote accountability, and based upon locally established priorities, objectives, and policies.
4. The Legislature should lend its support and encouragement to policy groups of the state in improving the system for the development of school personnel: preservice education, continuing education, inservice education, certification, and recertification. Recognizing that the teacher is central to ensuring quality of instruction, the system must provide improved and up-to-date preparation of personnel at all levels and include recruitment, retention, motivation to enhance continuity of experience, and incentives to promote effective instruction.

TABLE OF CONTENTS

Introduction 1

Summary of Findings from Assessment of Student Performance and Research Studies 4

Conditions Necessary for the Delivery of Improved Instruction 9

Recommendations 14

Conclusions 17

Appendix: Status of Student Performance 18

References 29

INTRODUCTION

Belief in Local Control. Texas public education has long been based on the premise that locally determined needs and local governance are more likely to result in effective instructional programs than those directed by state or federal authority. Strengthening local governance and decision making can ensure balance between interest of parents, students, educators, and taxpayers in their consideration of student and community desires for a higher educational standard.

Belief in Equal Opportunity for All Texas Children. Texas educators, school board members and legislators have struggled for years to develop an educational system of true equality of opportunity for every child in Texas. The Gilmer-Aiken legislation of 1949 formulated the first foundation program that attempted equality for each student, as it is currently known, without regard for race or residence.

Rodriquez. The program served the intent of the legislation until 1971 when the Federal District Court in a case styled *Rodriquez versus Edgewood Independent School District* ruled that Texas must provide equal opportunity for every boy and girl based on the wealth of the State as a whole regardless of the wealth of the local district.

In 1973 the United States Supreme Court reviewed the Rodriquez decision and stated that the use of the ad valorem tax was constitutional for financing Texas public education but needed revision to ensure equality among all districts statewide.

Response to Rodriquez. Following the Supreme Court review the 64th Legislature enacted House Bill 1126, which was the first legislation dealing with equality based on the wealth of the district and mandated an accreditation requirement for every district to receive state foundation school program funds.

Tax Reform. In 1977 the 65th Legislature produced Senate Bill 1 which supplied additional funds for equality for poor districts and increased funds for problems of poor students. Both HB 1126 and SB 1 included programmatic improvements through such special programs as vocational, bilingual, and special education but failed to add adequate funds for compensatory education for the large majority of economically and

educationally deprived students, of which 30.5% reside in the seven urban Texas schol districts — Houston, Dallas, Austin, Fort Worth, Corpus Christi, San Antonio and El Paso.

It is clear that if the ad valorem tax is to continue to be used as a major source of educational funding tax reform, it is necessary to ensure absolute equity in the distribution of state funds in Texas. Tax reform bills introduced in every session of the legislature for the last ten years have not solved the problem.

Tax Relief. Problems of inflation, new programs to address equality, and the state accreditation process have increased the cost of education significantly for all districts. Public demands for economies resulted in Proposition 13 in California which placed a limit on expenditures not only for public education but for all government services. Now Texas schools face the possiblity that restrictions will be placed upon available resources.

Initiative and Referendum. In Texas a special session of the 65th Legislature attempted to create legislation dealing with initiative and referendum limiting expenditures for public education while simultaneously demanding improved results through accountability and renewal. The original problem of dealing with the uniquely urban plight of more students with more educational and economic deficits is now compounded by the escalating costs of providing mandated programs, a loud cry for tax relief, and public demands for accountability and better results.

While the concept of limiting expenditures and improving products is applied to urban school districts in the same manner as other school districts and governmental entities, many of the problems faced by urban districts are unique and costly. For example, the effect of unique security and building maintenance requirements alone are more costly in urban districts. These costs continue to escalate while the public is demanding that total budget increases be held to a minimum. As a result, urban overburden costs comprise an ever-increasing proportion of school budgets.

The Urban Compact. Recognizing the need for improvement through a systematic internal process of evaluation for purposes of accountability and renewal, a compact of the seven largest urban districts and the

Texas Education Agency identified essential skills in grades six and eleven, assessed performance on these skills, and reported the results to the House and Senate Education Committees of the 65th Legislature. The compact proceeded to identify needed programmatic improvements; however, Texas schools simultaneously experienced a negative financial impact as a result of federal and judicial mandates which depleted funds otherwise available for improvement (workmen's compensation, special education programs, etc.). This depletion, accompanied by continuing cost escalations and increasing numbers and proportions of educationally and economically deprived students in the seven urban districts, magnified the growing need for compensatory education resources by these urban districts.

Unique needs of urban students have been identified and plans have been formulated for meeting their needs. Equalization of educational opportunity for urban students is vital and is dependent on the strengthening of the financial base of urban districts and on a continued reliance upon the urban districts' initiative and responsibility.

The Position Paper. The compact has a substantial base of urban research information and experience on which to build improved instructional programs to address learner deficits. This base, coupled with the state accreditation process, provides a framework for continued improvement of student achievement. This paper conveys much of what is known about the unique needs of the students served by urban districts and what steps have been taken and can be taken to undergird efforts to address these student needs. However, it should be noted that the recommendations included in this paper can be carried out only to the extent that the financial base of urban school districts is strengthened and ensured, with consideration given to the negative impact of legislative and judicial mandates.

SUMMARY OF FINDINGS FROM ASSESSMENTS OF STUDENT PERFORMANCE AND RESEARCH STUDIES

From the results of both the 1976 and the 1978 assessments of student performance the following findings emerge:

1. Many students in Texas urban school districts were making satisfactory progress toward mastery of those reading and mathematics skills judged to be essential to function effectively as adults in Texas society.
2. Achievement levels of certain sub-populations of Texas urban students were below what can reasonably be expected and were lower than the average achievement levels of students in the nation and in the state. Lower performance levels were found among:
   - students from low income families
   - ethnic minority students
   - students who come from homes where educational levels of parents are low, where a language other than English is spoken predominantly, and where few reading materials are available
   - students who spend large amounts of time watching television and who do not do homework

   No single factor alone is associated with low achievement. In most cases a combination of characteristics is found in the same students whose achievement is low. Findings are based on average scores for groups of students, and in every case there are individual students from each of these sub-populations whose achievement levels are high.
3. Performance of students was lower on those essential reading and mathematics skills judged to require higher order problem-solving and decision-making competencies than on the more specific and concrete skills.
4. Texas urban school districts have a higher proportion of lower socio-economic and ethnic minority students whose achievement

in reading and mathematics was lower than most of the other school districts in the state. In Texas elementary and secondary schools as a whole, about one-third of students in grades K-12 are from low income families, while almost one-half of students in Texas' urban districts are from low income families. Less than half of students in Texas school districts as a whole are black or Mexican American, while nearly two-thirds of students in Texas' urban districts are black or Mexican American.

Numerous studies conducted within Texas urban districts, along with research completed elsewhere, confirm the state assessment findings cited above. Clearly, achievement differences among students in urban, suburban, and other districts are directly proportional to the ratio of high-need, economically disadvantaged students within the school populations served. To meet the problem, Texas urban school districts have developed a substantial base of research information and experience on which to build improved instructional programs to address the learning deficiencies of high-need students. This base ranges from the identification of factors directly affecting school achievement to the selection and validation of potentially successful educational programs. The following section highlights major problem areas of particular importance to the achievement of high-need students within the urban school setting.

Time on Instruction and Intensity of Instruction. Research supports the expected relationship between student achievement and time spent on productive learning behaviors. However, urban research has revealed that use of available learning time within the classroom is a major instructional problem. In a study conducted in one urban school district, for example, elementary students have been shown to be intensively engaged in instruction approximately 2 hours daily or 45 percent of the school day. Within individual classrooms, the percentage of students intensively working at any time varies widely. Further, despite greater time planned for instruction, schools having greater percentages of disadvantaged students realize less actual learning time, suggesting increased management demands. Thus, while urban research has demonstrated experimentally that maximum use of planned instructional time on relevant learning tasks can accelerate the achievement of high-need elementary students, increasing the use of planned school instructional time at the campus level remains an important practical problem.

Student Attendance/Achievement. Student attendance is an important factor in maintaining continuity of instruction as well as directly affecting time on instruction. Numerous urban studies have revealed a high correlation between achievement and days in attendance. For example, elementary students scoring in the lowest quarter (lowest ¼ of student ranking by scores) on a nationally normed achievement test were not in school a significantly greater number of days than higher achieving students (43 vs. 20, 43 vs. 19, and 26 vs. 15 days in grades 4, 5, and 6 respectively). In another study, high-need Title I students enrolled in school for 140 days outperformed those enrolled only 100 days in both reading and mathematics achievement. In general, it is well accepted that the lower socio-economic students who are in greater need of instructional continuity are more likely to be absent from school, enter school later after school commences, and leave school before the term ends. Not only do urban districts have lower attendance percentages (90.7%) than the state (93.1%) as a whole, but the range of attendance percentages within urban districts commonly averages from 80 to 90 percent at the campus level, indicating that the typical inner-city student may be out of school one or two days out of ten.

Student Mobility. Paralleling the problem of attendance, studies of urban schools predominantly serving high-need inner city students have revealed an instructionally disruptive turnover rate that often ranges as high as 70-80 student entries and withdrawals per 100 students enrolled for a 100-day period. In fact, at many individual campuses, the number of in-out transfers easily exceeds the maximum enrollment of the school each year. This highly mobile disadvantaged student population may attend twelve or more schools within and across districts during their school career. Such lower-achieving students, for whom continuity and intensity of instruction are of greatest importance in learning, tend to fall increasingly further behind their less disadvantaged counterparts. For many of these students educational attitudes and self-concepts also suffer.

Teacher Mobility. The role of staff continuity in the maintenance of effective instructional programs has been clearly established in urban research studies. District-wide attrition rates of urban teachers as a whole are typically ten percent or more, generally much higher than those of suburban and rural schools. Within less desirable urban inner-city campuses containing the greatest numbers of high-need students, however, the attrition rate of teachers often reaches 30 percent or more

per year. Unfortunately, by ignoring school assignment as a salary factor, existing personnel policies indirectly mitigate against inner-city urban schools' maintaining needed quality staff. Merit-based incentive systems would help attract and retain the highly productive, quality staff required for effective urban schools.

Teacher-Administrator Competence. Teacher and administrator competence are related to student achievement in two areas of concern. First, teachers and administrators must themselves possess the minimal academic skills in reading, language arts and mathematics required to function in an effective instructional role. Additionally, teachers and administrators must possess a level of professional competence needed to offer effective instruction to high-need urban students.

Research conducted within Texas urban schools has shown that across the range of urban teacher ability, teachers having a higher academic ability receive higher ratings of their school and classroom setting and develop higher achieving students. Although the research cited above is suggestive rather than conclusive, other urban studies have demonstrated that many teachers and administrators lack minimal academic skills. Although certainly not ensuring professional success by themselves, the absence of minimal academic basic skills clearly prohibits a teacher from serving as an effective role-model to high-need academic students, and prohibits administrators from providing critically important instructional supervision and leadership.

In addition to adequate language and quantitative skills, teachers and administrators must possess a level of professional competence needed to offer effective instruction to high-need urban students. In brief, while the problems perceived by teachers within the urban setting have been repeatedly documented, there is little if any evidence to show that urban teachers and administrators as a whole are prepared to make maximum use of existing knowledge of the school learning processes in the planning, management, or supervision of instruction. While research into the role of teacher and administrator competence in student achievement has only begun, it has been recognized both by taxpayers demanding that educational personnel demonstrate their competence and by instructional theorists emphasizing its crucial importance for the achievement of high-need students within the urban setting.

Parental/School Relationship and Home Environment. The dependence of student achievement upon home environmental factors, including the parent-child relationship, is a well established fact. Since the home and school environment act jointly to determine student achievement, a coordinated parent/school partnership could surely accelerate the academic development of all urban students. Within the urban setting, between 10 and 15 percent of teachers' classroom problems have been directly attributed to home/environmental factors. In addition, another urban study has revealed that controllable home variables (e.g., time and place to study, parental supervision, constructive parent-child dialogue) contribute significantly to student achievement, independent of the influence of more constraining, economically-fixed, socio-economic factors. Moreover, this research confirms these manipulatable home environment factors offer an educationally usable method for helping to remediate established achievement differences between students of different ethnicity. In general, urban research has shown not only that 90 percent of parents of all students are highly supportive of parent/school partnership concept, but also that the majority (70 percent in fall, 50 percent in spring) will attend voluntary in-school conferences with teachers as part of a program in which parents assess children's basic skills learning and direct home study assignments.

To provide effective compensatory education for high-need students, it seems clear that, in addition to making best use of school instruction time, urban schools must attempt to influence the child's learning experiences in the home environment. Practical alternatives in this area include assignment of teacher-monitored homework, the coordination of such homework programs with parental supervision in a true partnership relationship, and programs to develop educationally-productive parenting skills that would serve families of high-need disadvantaged students.

CONDITIONS NECESSARY FOR THE DELIVERY OF IMPROVED INSTRUCTION

The urban compact has directed thoughtful consideration and study of assessment results and research findings referenced earlier. It has concluded that the needed special compensatory education programs and services can be provided, given sufficient resources, within a framework of conditions which the compact can manage and direct under their individual local control and initiative. These conditions, generalizable to other school settings, are as follows:

1. **The local board with community and professional staff identifies the teaching of essential reading and mathematics skills as a priority expectation.**

For the past few years there has been a growing realization across the United States that too many students within the public schools are not learning those reading and mathematics skills considered essential. Concerned citizens have charged that public schools:

- do not have a clear idea of what the public expects
- attempt to teach too many subjects, many of which seem relatively less important, to the detriment of reading and mathematics
- do not continuously and systematically emphasize these priority areas

Policy-making bodies must determine priority areas, as prescribed in the school accreditation process, make these priority areas known to all publics, and devise systems to ensure that the areas receive continuous emphasis. Constant attention must be maintained to keep them foremost in the curriculum.

2. **There is a clear local policy that tells all professional staff which areas are considered to be the most important. Priority expectations are clearly communicated to principals, teachers, parents, and students.**

If each school is to meet its responsibility for teaching students to master essential reading and mathematics skills, relevant priority expec-

tations must be clearly defined by the district's professional staff and communicated to all personnel who are involved in implementation. Board endorsement is essential to promote and encourage realistic implementation by administrators and teachers. In addition, local policy should provide for evaluation reporting by the superintendent and staff relating to student progress and the existing conditions of instruction, as well as the use of this information in decision-making processes affecting instructional programs.

> 3. **Administrators have competencies required for the management of essential reading and mathematics instruction.**

District and building administrators are expected to provide leadership in making instruction as effective as possible. Administrators organize the processes for the planning, implementing, and assessing the effectiveness of instruction.

Administrators must be aware of the priorities and be committed to their emphasis in the instructional program. Through programs of teacher, parent, and student orientation to the priorities and by using effective staff development resources, the proper emphasis can be achieved. Frequent appraisal of instructional plans and classroom visitation will prepare the teacher and the administrator to evaluate progress toward meeting the priorities.

> 4. **Time, talents, and energies of all professional staff are concentrated on planning and implementing instructional programs for student mastery of essential reading and mathematics skills.**

Coordination of efforts of the total professional staff is a key element in the success of any instructional endeavor. Planning must begin with commitment and competence of staffs in preservice institutions and must continue with appropriate inservice activities in local school districts. Implementation must include provision of adequate curriculum structure, research-validated instructional practices, resources, and leadership by central office and building-level administrators. Additionally, teachers must have the skill and commitment to teach and test for mastery, to coordinate support resources, to make effective use of instructional time, and to involve the students themselves, their parents, and the community in the instructional process.

5. Frequent classroom assessment of student performance is an integral part of the instructional process.

Educators must evaluate student performance in essential skills in a continuous manner. However, evaluation is seen by many as a judgment process, a means for determining success or failure at the conclusion of a program. On the contrary, periodic and objective classroom assessments of a student's mastery or nonmastery of educational objectives are indispensable in planning and implementing effective methods for improving student performance. Results obtained at frequent intervals are used for improving methods and materials to meet the immediate needs of students.

6. Professional staff ensures that instructional activities are well planned.

Planning is essential to sound administration and supervision, and effective teaching. Instructional management dictates that the principal, as instructional leader, plans, models, and manages the implementation of instructional activities in classrooms.

Research into classroom practices in teaching and learning indicates that there is often a vague understanding on the part of the teacher as to (1) what is to be learned, (2) what students must do to master the objectives, (3) what instructional conditions are demanded, and (4) what materials are effective in achieving learning. Many difficulties in teaching simply stem from failing to ascertain which classrooms objectives are being achieved and what important conditions of classroom instruction are being maintained.

Planning and evaluation of both student performance and the instructional environment cannot be left to chance.

7. Policy makers and administrators are committed to recruiting, employing, and retaining qualified, competent teachers and other instructional personnel.

Competent teachers are a key to the instructional program. If urban districts are to have qualified teachers and instructional leaders, an active program of selection, recruiting, staff development, and incentives for continued service must be developed and maintained.

The teacher selection process must include both objective and subjective factors to ensure that all teachers employed will have at least minimal competence in both essential intellectual and communication skills and professional skills in instructional methods.

After qualified teachers are selected and employed, staff development programs, and leaders for these programs, are needed to sharpen existing skills and further professional knowledge. Rotation of assignment, financial benefits for teaching in "difficult" schools, and opportunities for periodic retraining should be considered as possible incentives for keeping good teachers in urban districts.

> 8. **Teachers possess and can apply and teach essential reading and mathematics skills**

Responsibility for the development of personnel with high level reading and mathematics skills lies with both preservice and inservice programs of colleges, universities, and school districts. Responsibility also lies with the individual who is preparing to teach or is continuing development while teaching. A breakdown in acceptance of responsibility at any point — entry into or exit from teacher education, entry into teaching — and failure to assess and address the individual's needs during preparation and during service will surely lead to ineffective teaching and learning.

Cooperative activities between preparation institutions and schools should be planned and maintained in order to address deficiencies in developmental programs for teachers. Information about student assessment in reading and mathematics, and reading and mathematics program information — curriculum, methods, materials — must also be used to ensure that teachers are informed and trained to focus their time and talents on effective instruction in essential skills.

> 9. **Students and teachers have the time, materials, continuity of instruction, and an orderly situation for effective learning.**

Unless students and teachers have the time, materials, continuity of instruction, and an orderly environment in which to learn, statutes, policies, and programs become ineffective.

Instructional time — without interruption for teacher administrative or clerical functions — must be provided. Instructional materials correlated with curriculum objectives which meet the learning requirements of different students, must be available. Instructional support must complement instruction rather than conflict with it. Time for planning must be provided to maintain the continuity of instruction for the individual's learning, minimize disruptive behavior, maximize time for instructional tasks, and encourage active and positive participation in classroom activities.

> 10. **Students and parents are encouraged to assume a share of the responsibility for mastering essential reading and mathematics skills.**

As part of the educational program, students can learn skills allowing them to assume responsibility for their own learning. The school should provide an appropriate setting for learning. Parents also should be encouraged and supported to be partners in learning which takes place in the home. Lasting achievement will be ensured when each student sees the need to learn and achieves satisfaction from independent learning.

It is imperative, therefore, that teachers are familiar with ways to teach the essential skills so that students from a variety of backgrounds will pursue the mastery of these skills.

The urban districts have underway a variety of program improvement activities, many of which are directed toward improving achievement of lower socio-economic and ethnic minority students. The above-mentioned conditions for the delivery of effective instruction are consistent with these and other ongoing improvement activities.

CONCLUSIONS

The urban districts have established a toehold toward improving the achievement of lower socio-economic and ethnic minority students. Voluntarily, as well as through the school accreditation process, they have strengthened their capability to plan and implement general and compensatory education programs for school improvement. The two student assessment studies as well as various urban research studies have enhanced these programs. Furthermore, much of the voluntary planning of the urban compact brings into focus the following major conclusions:

1. Underachieving lower socio-economic and ethnic minority students require special compensatory education programs and services to develop reading and mathematics essential skills. Urban schools have many barriers to solving the problems of underachieving students because of size, complexity, and special student population needs including their home environment. Programs and services for high-need students require that urban districts have:
   a. research-validated instructional materials that focus on higher order thinking skills used in problem solving and decision making
   b. identified time during the school year with full pay for intensive staff training designed to develop specific teaching skills
   c. technical expertise to design and implement instructional programs which encompass research-validated classroom management systems
   d. technical expertise for evaluating and supervising the special instructional and support services, including bilingual and compensatory educational programs
   e. expertise in designing and implementing student assessment and individualized educational planning systems
   f. a pupil/adult ratio that facilitates effective instruction for high-need students
   g. research-validated programs to aid parents in assisting their children in home study and in complementing and extending time for productive learning at home through such activities

as games, parent-child dialogue, reading, speaking English, and reducing TV viewing time

h. alternatives and incentives for school districts, individual campuses and staff, to move personnel toward maximizing teaching time for essential reading and mathematics skills

i. research to identify and implement motivational programs for improving student attendance, discipline and attitudes toward learning and to increase students' educational aspirations

2. The urban schools must have qualified staffs who are competent to teach the essential reading and mathematics skills. This condition should be ensured through (a) teacher education programs and certification, (b) retraining and recertification where necessary, (c) appropriate inservice development for teachers and administrators, and time and expertise for delivery. Among the policies and processes which must be addressed are:

   a. the pre-service education and certification of all teachers which ensure that beginning teachers have demonstrated competence in reading and mathematics content and research-validated teaching practices

   b. teachers now in service be given the opportunity through school-sponsored staff development, released time, and continuation of certification to develop and demonstrate competence in reading and mathematics content and research-validated teaching practices

   c. the teacher selection process to include both objective and subjective factors which ensure that all teachers employed will have professional competence in the essential skills and in teaching procedures

   d. cooperative activities between teacher preparation institutions and public schools which are planned and maintained to guarantee that teachers develop and maintain relevant teaching skills in reading and mathematics

3. The urban school compact has demonstrated capability to develop and operate a minimal accountability and school improvement system. This has been accomplished without legislative mandate and in the true spirit of local control and initiative. While urban

districts have developed a basic system for improvement, the following components of the system need strengthening:

a. a comprehensive student achievement and school demographic data base with computerized data storage, retrieval and analysis
b. periodic classroom assessment of a student's mastery or non-mastery of classroom educational objectives to be used in planning and implementing effective methods for improving student performance in reading and mathematics
c. curriculum development and inservice education programs which will facilitate the needed instructional improvements for high-need urban students
d. the establishment of urban school-based applied research programs to identify, validate, and disseminate procedures for the continued improvement of educational practices directly relevant to solving locally-identified instructional problems

RECOMMENDATIONS

To address the conditions identified in this paper and to make possible the strengthening of educational programs that will improve student achievement in reading and mathematics, the 66th Texas Legislature is urged to consider the following actions:

1. The Legislature is urged to recognize that existing school accreditation standards and other policies of the State Board of Education currently require school districts to carry out effective accountability procedures: assessment of the proficiency of students in mastering basic competencies, evaluation of instructional programs, and planning for the improvement of instruction. Most Texas school districts are already making tangible progress toward strengthening their accountability under State Board policies. It is important that additional statewide assessments of student achievement in basic curriculum areas be carried out in subsequent years to provide a reference for school district accountability and to serve as a basis for statewide policy planning and for reporting to the legislature.
2. The Legislature should increase funding levels of state compensatory education programs and services and provide for allocation of funds through a formula which recognizes high-cost instruction required wherever there are concentrations of high-need, underachieving students.
3. The Legislature should provide resources to support effective procedures for accountability and renewal in school districts — student assessment, evaluation of instruction, and planning for improvement of instruction — within the framework of the State Board accreditation standards and other policies that promote accountability, and based upon locally established priorities, objectives, and policies.
4. The Legislature should lend its support and encouragement to policy groups of the state in improving the system for the development of school personnel: preservice education, continuing education, inservice education, certification, and recertification. Recognizing that the teacher is central to ensuring quality of instruction, the system must provide improved and up-to-date preparation of personnel at all levels and include recruitment, retention, motivation to enhance continuity of experience, and incentives to promote effective instruction.

APPENDIX: STATUS OF STUDENT PERFORMANCE

In the past three years two important studies have been made of the achievement of students in Texas urban school districts in the areas of reading and mathematics:

1976 — A Position Paper on Accountability/Renewal
1978 — Texas Assessment Project

The findings of these two studies are used as the basis for the priority student learning needs addressed in planning for educational improvement. It is these discrepancies between what students should be learning and what they are actually found to be learning that constitute the identified student achievement deficiencies which must be addressed and in which improvement is imperative.

The 1976 Study — A Position Paper on Accountability/Renewal

In November of 1976 the seven largest urban school districts in Texas and the Texas Education Agency cooperated to conduct a large-scale assessment of the achievement of sixth grade students in reading and mathematics. The reading and mathematics tests of the Iowa Test of Basic Skills (ITBS) were administered to a sample of six percent of sixth graders in the seven urban districts. Other demographic information was gathered and was related to the average scores obtained for subpopulations of the sixth grade students tested.

To identify students who come from low income families, eligibility for participation in the free or reduced school lunch program was used as a criterion. The percentages of sixth grade students from low income families in 1976 are shown in Table 1.

Table 1: Percentages of Students from Low Income Families

Texas Urban Districts	44.41%
Texas	35.46%
All Other Texas Districts	32.87%

The achievement of students from low income families was lower than that of students from average or higher income families on all three subtests as shown in Table 2.

Table 2: Sixth Grade Achievement by Family Income Status (National Average = 6.20 Grade Equivalent)

Achievement Subtest	Family Income Status	Mean Grade Equivalent	Number of Students in Sample
Reading Comprehension	Low	4.55	1,016
	Higher	5.84	1,265
Mathematics Concepts	Low	4.88	1,016
	Higher	5.85	1,265
Mathematics Problem-Solving	Low	4.98	1,016
	Higher	5.78	1,265

Proportions of students in three ethnic groups were studied for Texas as a whole, for the seven largest urban school districts in Texas, and for the national sample used in norming the tests as shown in Table 3.

Table 3: Percentages of Ethnic Distributions

Ethnic Group	Sixth Grade Students Enrolled in Texas Urban School Districts	Sixth Grade Students Enrolled in All Texas Districts	Schools Included in National Norm Group for the Iowa Tests of Basic Skills
Black (not Hispanic)	32.4%	15.4%	15.7%
Hispanic*	29.5%	24.6%	4.0%
White (not Hispanic)	37.5%	59.5%	79.1%

*Mostly Mexican American

Ethnic minority students' average scores were lower than those of other students (predominantly white students) on all three sub-tests, as shown in Table 4.

Table 4: Achievement Results by Ethnicity (National Average = 6.20 Grade Equivalent)

	Ethnic Group	Iowa Tests of Basic Skills Mean Grade Equivalent	Number of Students in Sample
Reading Comprehension	Black (not Hispanic)	4.62	697
	Hispanic	4.81	722
	White (not Hispanic)	6.26	797
Mathematics Concepts	Black (not Hispanic)	4.84	697
	Hispanic	5.11	722
	White (not Hispanic)	6.20	797
Mathematics Problem Solving	Black (not Hispanic)	4.90	697
	Hispanic	5.21	722
	White (not Hispanic)	6.06	797

The 1978 Study — The Texas Assessment Project

In April of 1978 two types of reading and mathematics achievement tests were administered to a random sample of Texas students:

1. Criterion-referenced (or objective-based) tests of the essential reading and mathematics objectives established for Texas students were given to sixth and eleventh graders.
2. Nationally standardized norm-referenced tests of reading and mathematics, the California Achievement Test (1977 norms), were administered to sixth graders.

Separate analysis was made of the performance of sixth and eleventh grade students from the seven largest urban school districts in Texas to identify successful areas of achievement as well as student learning discrepancies.

As in the 1976 study, demographic information was gathered and related to student achievement results.

Information from the U.S. Bureau of Census disclosed that Texas has a higher proportion of citizens below the poverty level than does the nation, as shown in Table 5.

Table 5: Comparison of Texas With The Nation: Poverty Level

	UNITED STATES	TEXAS
PERSONS BELOW THE POVERTY LEVEL (U.S. Bureau of Census Statistical Abstract, 1977)	11.4%	15.2%

More than one-third of Texas sixth grade students were identified as being members of low income families, based on the criterion of eligibility for participation in the free or reduced price lunch program.

Comparison of students in grades K-12 disclosed that Texas has approximately twice the percentage of ethnic minority students as does the nation, as shown in Table 6. Compared to Texas' minority student populations, Texas urban districts have twice the proportion of black students, and almost 25% more Mexican American students. The urban districts have almost 64% fewer "other" students than the state as a whole.

Table 6: Comparison Of Texas, The Nation And Texas Urban Districts: Ethnic Student Population

	UNITED STATES	TEXAS	TEXAS URBAN
MINORITY STUDENT POPULATION			
Black	14.5%	15.3%	32.2%
Mexican American	5.6%	25.3%	31.5%
Other	79.9%	59.4%	36.1%
(Texas Education Annual Fall Survey, 1977, and U.S. Bureau of Census Statistical Abstract, 1977)			

From mid-point and exit level essential reading and mathematics objectives established for Texas students, certain objectives were selected to be measured by criterion-referenced tests on the basis of their central significance to the curriculum. They do not represent the entire domain of reading and mathematics, but represent selected important elements of the total reading and mathematics curriculum. These objectives are listed in order of the degree of mastery attained by urban students as reflected in the Texas Assessment Project.

Assessment of Essential Reading Objectives

The results of the Texas Assessment of essential objectives in reading have been summarized in Tables 7 and 8, where the percentages of students demonstrating mastery of each objective have been classified by demographic location and ethnic background. Careful study of the data in these tables reveals the following points:

1. A majority of Texas' sixth and eleventh graders were able to demonstrate mastery on each of the reading objectives. However, on many of the objectives, the percentage of students demonstrating mastery was still considerably below 100%. For instance, fairly high percentages of students, at both grade levels, were unable to demonstrate that they could distinguish between fact and non-fact. Many sixth graders

were unable to draw logical conclusions or predict probable future actions or outcomes. Among eleventh graders, many students had difficulty in making generalizations based upon given details or assumptions.

2. Performance of urban students on essential objectives paralleled, yet trailed behind, that of students in Texas as a whole. The difference was more pronounced among those objectives which appear to call for higher order cognitive skills (marked with an asterisk).
3. Differences in levels of performance among students of different ethnicities were particularly noticeable. On almost all objectives, at both grade levels, black students performed less well than did Mexican American students, who in turn performed less well than did "other" students. Again, these differences were most pronounced for those objectives which appeared to require more complex cognitive skills.

Table 7

Sixth Grade Essential Reading Objectives Test Results

	Percent Mastering				
	Demographic			Ethnicity	
	Texas	Urban	Other	Mex. Am.	Black
Use of index to locate information	94	92	96	90	90
Use of context to understand meaning of words	93	91	96	89	87
*Explain and relate to feelings and emotions of characters	90	87	96	86	81
Follow written directions	88	84	93	83	76
Use maps, charts, graphs and schedules	86	82	94	80	69
Arrange a list of events in sequence	85	82	90	79	76
*Identify main idea	84	79	91	76	71
Recall facts and details	80	77	87	73	69
*Draw logical conclusions	66	59	74	59	51
*Distinguish between fact and non-fact	62	54	76	47	41
*Predict probable future actions or outcomes	62	57	70	56	46

*Judged to be higher order cognitive skills.

Table 8

Eleventh Grade Essential Reading Objectives Test Results

	Percent Mastering				
	Demographic			Ethnicity	
	Texas	Urban	Other	Mex. Am.	Black
Follow written directions	96	93	98	94	88
*Perceive cause-and-effect relationships	91	87	94	85	81
*Identify the main idea	90	87	95	83	78
Arrange a list of events in sequence	89	82	93	83	74
Use indexes, contents, title pages, etc., to locate information	86	83	90	80	73
Use graphic sources to obtain information	86	81	92	75	70
*Evaluate information and make judgments	81	75	89	67	59
*Make inferences and draw logical conclusions	80	73	89	64	58
*Distinguish between fact and non-fact	72	67	81	52	50
*Make generalizations based upon given details or assumptions	69	65	78	51	46

*Judged to be higher order cognitive skills.

Assessment of Essential Mathematics Objectives

The results of the Texas assessment of essential objectives in mathematics have been summarized in Tables 9 and 10. In these tables, the percentage of students demonstrating mastery of objectives has been classified by demographic location and ethnic background. Careful study of the data in these tables leads to the following conclusions:

1. Except for sixth graders' performance on two of the mathematics objectives, a majority of students at both grade levels was able to master each objective. On more than half of the objectives on both lists, more than one-fourth of students in Texas urban districts were unable to demonstrate mastery.
2. Many sixth graders had difficulty in solving problems involving various measures (area, volume, time, etc.), in adding and

subtracting fractions having unlike denominators, and in solving problems using multiplication and division. Eleventh graders had most difficulty in using mathematical concepts and computational skills in keeping personal records, in using percentages and ratios in problem-solving situations, and in adding and subtracting fractions and decimal numbers.

3. The performances of urban sixth and eleventh graders paralleled, yet trailed behind, that of Texas students as a whole. The fact that 60 percent or less of Texas urban eleventh graders showed evidence that they could perform the necessary calculations in keeping personal records, in solving problems involving ratios and fractions, and in performing ordinary operations on fractions and decimals, is cause for concern.
4. On nearly all the mathematics objectives, the performance of ethnic minorities was considerably below that of "other" students. This difference was more pronounced on those objectives judged to require higher order cognitive skills.

Table 9

Sixth Grade Essential Mathematics Objectives Test Results

	Percent Mastering				
	Demographic			Ethnicity	
	Texas	Urban	Other	Mex. Am.	Black
Addition of whole numbers	85	83	87	85	77
Multiplication of fractions	85	85	87	80	82
Interpret place value	84	82	90	78	70
Recognize numerals	82	76	90	74	68
Multiplication of whole numbers	80	75	85	78	64
Subtraction of whole numbers	79	73	85	77	64
*Solve problems using addition and subtraction	72	66	82	66	50
Use reference units	71	62	80	62	51
Division of whole numbers	70	63	79	64	50
*Solve problems using multiplication and division	65	59	74	58	43
*Solve problems using measures	35	32	44	27	18
Addition and subtraction of fractions	33	28	42	23	17

*Judged to be higher order cognitive skills.

Table 10

Eleventh Grade Essential Mathematics Objectives Test Results

	Percent Mastering				
	Demographic			Ethnicity	
	Texas	Urban	Other	Mex. Am.	Black
Addition and subtraction of whole numbers	96	94	97	95	90
Read and interpret information on charts and graphs	93	91	96	90	83
Multiplication and division of whole numbers	91	90	94	88	81
Count various combinations of paper money and coins and coins	90	89	93	88	78
*Solve problems using measures	84	80	90	76	66
*Solve problems involving whole numbers	77	66	86	67	45
Addition, subtraction, multiplication, and division of numbers	77	72	84	71	55
Use scales to determine map distances and locations	76	73	82	71	56
*Use concepts and computational skills	65	60	73	54	37
*Use ratios and percent in problem-solving	65	56	74	53	39
Addition, subtraction, multiplication, and division of fractions	61	53	69	49	37

*Judged to be higher order cognitive skills.

Norm-Referenced Achievement in Reading And Mathematics

A summary of the performance of sixth grade Texas students on norm-referenced achievement tests in reading and mathematics is presented in Tables 11 and 12. Results are presented for students statewide, in urban school districts, and in three ethnic categories.

As can be seen in the tables, performance of Texas students statewide in reading achievement was somewhat lower than that of the national norm population. In mathematics, however, performance of Texas students in mathematics computation was above the national average while performance in mathematics concepts and applications was below the national average.

Norm-referenced reading and mathematics achievement scores of students in Texas urban school districts was six to nine percentile points lower than that attained by students statewide, with the differences being greater for reading than for mathematics.

Overall, students classified as "other" showed levels of achievement higher than the national average. Achievement scores of minority students were considerably below those of "other" students, with Mexican American students scoring higher than black students.

TABLE 11

Percentile Ranks in Reading
Sixth Grade

	Statewide	Urban	National
Vocabulary			
Other	60	61	
Mexican American	29	30	
Black	29	28	
TOTAL	47	38	50
Reading Comprehension			
Other	56	57	
Mexican American	30	29	
Black	28	28	
TOTAL	44	35	50
Reading Total			
Other	58	58	
Mexican American	29	28	
Black	28	27	
TOTAL	45	36	50

TABLE 12

Percentile Ranks in Mathematics
Sixth Grade

	Statewide	Urban	National
Computation			
Other	62	64	
Mexican American	47	47	
Black	36	36	
TOTAL	54	47	50
Concepts and Applications			
Other	55	60	
Mexican American	32	32	
Black	26	27	
TOTAL	43	37	50
Total Mathematics			
Other	59	63	
Mexican American	38	39	
Black	30	30	
TOTAL	48	42	50

REFERENCES

1. *A Position Paper on Accountability/Renewal*, Urban Compact, January 1977.
2. Block, James H., "Individualized Instruction: A Mastery Learning Perspective," *Educational Leadership*, February 1977.
3. *Curriculum for the 1980's*, Texas Association for Supervision and Curriculum Development, 1974.
4. *Improving Educational Achievement*, National Academy of Education Report to assistant secretary of H.E.W., 1978.
5. Operation Fail Safe, Houston Independent School District, 1978.
6. Peck, Robert, Teaching Learning Interaction Study, 1978.
7. *Principles, Standards and Procedures for the Accreditation of School Districts*, Texas Education Agency, AD7 825 01, Austin, Texas, May 1977.
8. Stallings, Jane, *Teaching Basic Reading Skills in Secondary Schools*, AREA, Toronto, March 1978.
9. Stallings, Jane, *Effective Teaching and Learning in Urban Schools*, Stanford Research Institute, Menlo Park, California, July 1978.
10. Proceedings, Task Force on Extended Urban Reform, U.S. Office of Education, November and December, 1978, San Antonio, Texas.
11. Local Research by Texas Urban Districts.